



The Impact of Calm Spaces on Behavior, Emotional Regulation, and Academic Engagement in Special Education Classrooms

Faustina Mantey

St. Louis University Baguio City, Philippines

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*Corresponding Author E-mail: manteyfaustina3@gmail.com

ABSTRACT

Calm spaces are increasingly used in special education classrooms to support students who experience difficulties with emotional regulation, behavior, attention, and academic participation. This study examined the effects of classroom calm spaces on students' behavior, emotional regulation, and academic engagement. A mixed-methods design was employed, combining questionnaires, semi-structured interviews, and classroom observations. Participants included 21 students and 19 teachers from multi-categorical special education settings. Quantitative data were analyzed descriptively, while qualitative responses were coded and interpreted thematically. The findings showed that calm spaces were widely used and positively perceived by both groups. Among students, 85.8% reported feeling better after using the space, while 61.9% indicated improvements in classroom behavior and focus. Teachers reported stronger outcomes, with 89.5% observing improved self-regulation and 94.7% noting greater student focus after calm-space use. Qualitative findings further revealed reductions in emotional outbursts, disruptive behavior, anxiety, and agitation, alongside improved readiness to return to learning. Sensory materials, quietness, comfortable seating, and opportunities for temporary withdrawal were identified as important features. The study concludes that calm spaces function as supportive pedagogical interventions that promote emotional safety, behavioral stability, and productive academic re-engagement among students with diverse special educational needs when implemented consistently with guidance from trained educators.

Keywords: Academic Engagement; Calm Spaces; Emotional Regulation; Special Education; Student Behavior.

I. INTRODUCTION

Students experiencing disabilities in special education require a supportive and nurturing environment where they can academically improve, as they often grapple with emotional regulation and self-managed behaviors as they progress. In addressing these obstacles alongside educators, tailored strategies aim to assist students with special needs by incorporating individualized approaches to specific challenges which are not usually discussed. It is imperative that educators challenge students within these ranges to create an enhanced learning atmosphere better equipped to assist students with special needs beyond what is found in a conventional classroom. One implementation of this model is the addition of designated calm zones within special education classrooms where children can retreat to reset, self-regulate, and refocus to complete their work. Student progress, accessibility, and building self-confidence are all essential components that support the necessary academic growth and success (Woodcock, 2022). Building self-regulation skills using inclusive classroom strategies is necessary to achieve emotional control and improve behaviors, as Sattari, Emadian, and Ghanadzadegan (2024) conclude. These factors are proof that effective teaching can have a guaranteed impact on the classroom.

This study aims to fill in the knowledge gaps regarding the impact calm spaces have on the behavior, emotions, and academic participation of students studying in multi-categorical special education settings. It tries to build an evidence base in the existing literature on the real-world issues posed by mildly autistic, emotionally disordered, or attention-deficit hyperactive disordered children to determine how such calm spaces assist them. Moreover, the study will focus on the calm spaces used by teachers as well as their integration with other interventions, which will enhance the knowledge for practitioners and educators in multi-categorical classrooms. O'Donnell and Reschly (2020) highlighted the benefits of participation for students, including those with special needs who may have difficulties with attention, emotion regulation, and stress management. To them, engagement is broader than the completion of assignments; it encompasses a student's cognition, feelings, and connections relative to their learning. Maintaining engagement is difficult when students experience emotional or behavioral challenges. That is where calm spaces can really make a difference. These spaces allow students to take a breather, emotionally reset, and return to class to better

poised learning.

Some of the key issues that learners with special education needs are likely to encounter include the degree to which one can control oneself, impulsivity, socialization, and the ability to pay attention in a conventional classroom. Children with disabilities tend to face behavioral problems because of emotional, developmental, or sensory reasons. Such problems can manifest as emotional outbursts, non-compliance, complete withdrawal, or even self-injurious behavior (Wood, 2023). These actions are common because students do not know how to adequately articulate their feelings or cope with stress and sensory stimuli overwhelm.

As defined by emotions, anger, intense stress, anxiety, and deep frustration, the need to control them renders the students powerless. As put forward by Van Der Steen et al. (2020), emotional regulation refers to the ability to identify emotions and manage those feelings, which include anger, stress, anxiety, and frustration. Students with disabilities, unfortunately, have a very difficult time articulating how they feel, especially when they are overwhelmed. Therefore, students can emotionally break down, burst into tears, shut down, or leave their tasks because they lack coping strategies, resulting in feelings too intense to manage. The complex and diverse requirements of learners with special educational needs make it challenging to sustain engagement within the lesson.

Once students become frustrated, it may affect their self-esteem, particularly in the face of complicated or overbearing demands. Just like others, these students with sensory sensitivity find bright lights, loud sounds, and even busy classrooms to be overwhelming. These students often struggle to call for help, as they have difficulty with communication. Because of these overwhelming difficulties, their academic engagement, as well as their interest in learning, significantly diminishes (O'Donnell, K. C., & Reschly, A. L. 2020). The students' individual skills make it easy to become annoyed and anxious, which leads to difficulty maintaining focus.

Should students' behaviors, emotional self-regulation, and academic involvement go unaddressed, these challenges can impede the students' progression within the academic scope and their overall well-being. Since calm spaces within the classroom are regarded as important areas for intervention to aid students' problems, others understand these spaces as a place providing a structured and safe environment for students to manage their stress and emotions (Azano et al., 2020). In educational settings, calm spaces are designated as specific areas within the classroom that offer children secluded quiet zones where they can retreat and recuperate when feeling overwhelmed. These spaces are constructed with soft chairs, sensory materials, gentle lighting, and other calming visual aids to ensure students' safety and comfort. Evidence suggests that as students calm down and regulate their emotions, they are able to learn. Students may opt to access these spaces independently or with some guidance from a teacher to take a brief pause without disrupting the flow of learning in the classroom.

Students with access to calm spaces consistently show fewer emotional outbursts and exhibit improved conduct and greater compliance after prolonged calm space use when compared to students devoid of such access. Students become cognizant of their triggering factors and begin to ask for pauses before events escalate into full-blown conflicts. Programs once perceived to be impossible with such students are now feasible; strategies like deep breathing, pedal pushers, and other sensory tools are becoming commonplace. Enhanced behavior promotes enhancement in social relations between pupils and teachers. Students with mild to moderate disabilities can benefit from these changes because such classrooms can become more inclusive and less hostile learning environments. There is a tendency to include calming spaces in class, which has been shown to improve emotional well-being while reducing disruptive behavior and engagement with lessons and these diagnostics.

Generally, the rooms provide sensory-friendly spaces with subdued illumination, cozy seats, calming visuals, and stress-relieving materials. These spaces are for de-escalation, the ones students go to when they are swamped, stressed, or frustrated (Delisio et al., 2023). Calm spaces have increasingly made their way into special education classrooms, but there is little to no empirical evidence examining their use in this context. This study intends to assess the impact of these spaces on students' behavior, emotional regulation, and academic achievement to address that gap. This study investigates the ways calm spaces help in reducing classroom distractions for teachers and how it improves their classroom response patterns. In addition, it will examine the relationship between calm spaces and other behavioral or educational interventions within the framework of a comprehensive student support model.

II. LITERATURE REVIEW

In the last couple of years, calming spaces in educational contexts have received more attention due to their role in enhancing student behavior, emotion management, and engagement with learning activities. Integration of these spaces into special and general education settings features an enclosed area of low stimulation that is patterned to assist students who have self-regulation challenges. Studies posit that exposure to calm environments may diminish stress, enhance attention to tasks, and improve classroom behavior amongst learners with autism spectrum disorder (ASD) and other emotive or sensory challenges (Mygind et al., 2021; Felix et al., 2022). While the positive impacts of calm spaces are accepted widely, there has been scant investigation on how these spaces are used and whether they are attuned with existing educational frameworks.

Spaces intended for calming have been studied to this date, primarily concerning their impact on emotional resilience, anxiety, and student well-being. Other studies have emphasized the need to carefully study the phenomenon to further analyze the positive relationship between calm spaces and academic achievement about specific behavior change objectives, such as improvement of attention span and impulse control. It is known that the views of teachers and school staff are fundamental for the creation and sustainability of these spaces. However, there is little evidence regarding calm spaces in relation to other classroom strategies such as integrated social-emotional

learning programs and structured behavioral support plans, as well as systematic investigation of the experiences of teachers. To enable these frameworks, the gaps need to be resolved to ensure the correct use of inclusive education while integrating calm spaces. This paper aims to reflect what is available in the literature regarding calm spaces with a focus on their impact on student behavior, emotional regulation, and the role of educators from a responsiveness perspective, as well as ways these spaces could complement other interventions. The review attempts to draw attention to these aspects for the purpose of demonstrating the gaps in the literature scope, which is needed for formulating best practices related to the design and use of calm spaces in such educative settings.

2.1 Impact of Calm Spaces on Behavior, Emotional Regulation, and Academic Engagement

The calm spaces that are being developed as transformative environments for self-regulation and academic participation in different educational contexts within special education settings have already been discussed. Mygind et al. (2021) demonstrates that exposure to green and calming environments significantly diminishes stress, and the study further develops the idea that thoughtfully designed physical spaces foster emotional well-being. This reduction is beneficial, particularly because students who experience chronic stress or anxiety or have attention and sensory processing challenges tend to perform worse cognitively (Mygind et al., 2021). For example, substantiating the importance of these spaces, French et al. (2020) not only advocate that such spaces contribute to aesthetics but also that pedagogy, culture, and structure of the school environment warrant their usage.

Learning environments should not be referred to as passive areas of relaxation. Rather, their role is as active contributors in aiding more supportive and inclusively engaging environments that provide emotional support. Additionally, qualitative data from Felix et al. (2022) illustrates the impact of safe classroom space on students with Autism Spectrum Disorder (ASD), detailing how greatly such an environment can reduce stress levels amongst students and allow them to focus on their schoolwork. This is indeed critical to developing a supportive environment because students with ASD often have difficulties with sensory regulation and social interaction. Calm spaces can foster a school environment that is soothing and predictable (Felix, 2022). These studies capture the potential of calm spaces to unify and relieve faculty while enhancing emotional mentorship and supporting improved academic performance and behavioral consistency, particularly among students with special needs.

2.2 Impact of Calm Spaces on Behavior and Emotional Regulation

Studies highlight that access to safe spaces and reduction of stress aids behavior and learning in students with ASD, anxiety, and heightened sensitivity to stimuli. Mygind et al. (2021) have uncovered that one's stress level and mood can be increased through tranquil environments containing elements of nature. These studies validate the claim that the surroundings of students facilitate them 'acting out' the processes of emotion regulation rather uniquely in academically laden situations like classrooms. Felix et al. (2022) also discuss that environments with low stimulation offer safety to students in that they can shut off overwhelming feelings of frustration, anger, or anxiety before engaging in activities in the more mainstreamed portions of the classroom. French et al. (2020) address that calmness is not simply about the appearance; rather, it is the associated culture and education of that society that becomes part of the school design. In the same way that relief areas existed, calm spaces strive to change the student's emotional condition from stress to calm. This is crucial for the students with an IEP, particularly those with behavioral problems, which may include additional difficulties with control, impulsiveness, or anger.

Schedules that incorporate positive behavior reinforcement, calm spaces, and self-calming techniques are effective in these cases because children can learn and practice the suggested self-calming techniques. Although these studies, too, have gaps concerning how teachers in the BIPs endorse areas designated for calm (Felix et al., 2022). It is often encouraged as a form of treatment in and of itself - as design, for that matter - which might explain why so few experimental investigations are made of its usefulness in a behavioral support framework. The perspective, in a very Westernized American way, is rather narrow and practical.

2.3 Calm Spaces and Academic Engagement

Calm areas are implemented in schools to manage the learner's emotions and their behavior, but there is limited evidence that connects such spaces with learning activities. Emotional impulsive behavior and stress greatly influence academic motivation, which includes attending, persisting in tasks, contributing to the class, and self-asking. By decreasing these barriers, calm spaces could positively affect students' performance (Delisio et al., 2023). However, most of the past works have aligned with studying near behavioral modification or the self-emotional sphere without defining the academic impacts as perfection. In this regard, one cannot determine whether the students who clearly interact with the calm space have improved focus, work rates, or learning task involvement in a certain time span.

However, studies also shed little light on how calm environments align with instructional practices or academic strategies such as differentiation, executive skill development, or social-emotional learning. There are no explicit scholarly papers that have questioned whether the use of calm space is in harmony with the teachers' plans and perceptions for the improvement of student academic performance or is considered an interference with the instructional time (Delisio et al., 2023). Before, teachers didn't keep records of how a calm environment affects student-centered learning and the learning process. This is a problem because of the need to enhance the application of emotional regulation Strategies in teaching practices are crucial for improving the existing paradigm of inclusion in the education sector. Subsequent research should also determine whether the physical aspect of the intended calm Environments is linked to academics and teacher perceptions, as well as the efficacy of such designs if they are potentially useful for learning readiness.

2.4 Specific Behavioral Outcomes

Above behaviors such as paying attention, being socially active, and others require a degree of self-management.

The circumscribed literature on calm space theory does not attend well to exploring how behavioral change responds to the intervention. Lesiuk (2018) indicates that the integration of calming corners in high schools can significantly alleviate stress levels within high schools—an improvement in overall classroom management. Furthermore, emotional outbursts and impulsive behavior among students were, to some extent, eliminated due to the designated calm spaces, providing students with the ability to interact in a more orderly and productive manner. According to Nyakoe (2024), sensory-informing elementary school design has also proven the capacity to bring about meaningful changes to student engagement and self-regulation. Educational practitioners who incorporate soft lighting, cushioned chairs, quiet zones for individual learning, and other sensory-friendly features can, therefore, devise a soundless environment that supports students to focus on their work and participate in active learning.

Moreover, these spaces can help students improve their social interactions by enabling them to self-regulate in a monitored setting (Nyakoe 2024). Although these data suggest that calm spaces are useful component in solving problem behavior, what remains unknown is how particular environmental factors such as spatial configuration, lighting, or sensory components could optimize and reinforce positive behavior change within the diversity of the educational setting. Under deeper scrutiny, the multifarious effects of calming spaces on individual behaviors can render the focus of educators and policymakers much clearer regarding the design of learning spaces that consider both academic achievement and behavioral health.

2.5 Assessment and Measurement of Self-Regulation Outcomes

To justify the impact of self-regulation of spaces on students' academic performance and behavioral functioning, their effectiveness must be evaluated. There has been some literature regarding the positive potential of these spaces in the recent past, but a central problem has been developing well-defined, systematic approaches to evaluate these frameworks. According to Delisio et al. (2023), overly simplified environments can lead to excessive stimulation, thus preventing children from achieving calm and focus. This indicates that self-regulation spaces need to be designed with great consideration. Eliminating all forms of input response in self-regulation will only deepen the gap (Delisio et al., 2023). A theoretical model and regulatory framework show that self-regulation as such is a process that is multi-faceted and includes biological, emotional, cognitive, social, and reflective elements, and therefore, for any assessment to be effective, it must take into account a multitude of influences on student behavior and learning.

Petka (2024) points out the existence of self-regulatory attention, impulse control, and emotional stability SEL outcomes that are unstandardized and quantitative as a gap in the literature. Current studies, while important, tend to use qualitative observations, teacher-conducted evaluations, or broad behavior assessments to understand the self-regulation spaces in classrooms, which overlooks unbiased, precise data exposing the exact mechanisms that augment classrooms to understand the self-regulation spaces. In-depth consideration of the assessment logic exposes the gap created with the absence of robust measures pertaining to the impact of space design, which limits understanding of the behavioral and academic engagement improvements claiming influence by other environmental and instructional variables. The gap exposes the absence of focused examination directed towards constructing reliable methodologies capturing systematic observation alongside quantifiable data collection techniques.

Mixing different tracking methods to create a more comprehensive biometric monitoring system that tracks physiological and emotional responses to self-regulation interventions and combining behavioral tracking and biometric tracking is one of the most promising solutions to this problem. For instance, aspects of wearable technology could measure stress regulation by evaluating heart rate variability or skin conductance levels (Liebl, 2021). Eye-tracking and attention-monitoring devices could give objective measures on how pupils use self-regulation spaces during the lesson as well as their eye focus retention before and after the usage. Similarly, some tools for standardized assessment of control of impulses, emotional self-control, and cognitive flexibility, such as the Self-Regulation Questionnaire (SRQ) or Behavior Rating Inventory of Executive Function (BRIEF), could be adapted for these purposes. There are sound theoretical and empirical grounds for such attempts. With these strategies, research design would allow educators and researchers to disentangle the self-regulation spaces and outcomes from the students, identifying and analyzing his or her design and optimization processes rather than taking the environment.

2.6 Teacher Professional Development and Collaborative Implementation

The embedding of self-regulation spaces into the frameworks of inclusive classrooms relies on the pedagogical skills of the teachers and professional teamwork. The sharp focus on inclusive education has led to the incorporation of self-regulation strategies within schools, and most teachers have not received adequate training to properly adapt these interventions from a theoretical and practical perspective (Ashe, 2023). There is growing concern about insufficient self-regulation capabilities among students, and Lesiuk (2018) noted that a relatively small number of teachers have employed evidence-based practices into their teaching approaches. The concern with such an outlying gap is that using self-regulation spaces effectively is nearly impossible, as there is no pluralistic alignment between their use and the physical environment – self-regulation spaces' success depends on various instructions and strategies incorporated.

For educators to be effective in performing their duties, self-regulation and sensory overload must be accounted for within the classroom environment. Furthermore, it is much more than just a designated calm space; rather, it encompasses the broader intentions of support for the pedagogical approaches that optimally balance students' self-regulatory needs. Educators must recognize dysregulation within the classroom, guide students to choose appropriate self-regulation options, and recursively analyze behavior changes over time (Schmidt, 2019). Lesiuk's (2018) applied project provides evidence that professional development can indeed be goal-oriented for professionalism within these frameworks. Successful spaces for self-regulation to be used should only be designed and sustained by educators who have effectively been trained on how to maintain them, and this comprehensive training

ought to include best reasoning and applied practices. In addition to that, one must have clear knowledge concerning the neurobiological aspects of self-regulation, how to employ trauma-informed practices, and differentiate regulating strategies tailored to varying student needs.

Nonetheless, ignoring this acknowledged necessity, there is still a broad gap in professional development that is tailored towards research, particularly concerning self-regulation of instructional techniques. Furthermore, educators indicate they receive no or very limited initial training on the topic, or when they do, they cite training programs that do not allow for meaningful collaboration and refinement among stakeholders at later stages (Pierce, 2022). Teachers don't have systematic structured opportunities to interchangeably observe and evaluate robust implementation of various intercessions and subsequently modify their approaches in alignment with the posture of a group of like-minded professionals. A lack of a collaborative framework in silos is what gives rise to the gap in longitudinal studies and learning on economically under-utilized spaces, as learners motivated by autonomy, paced to regulate their own effort, can be systematically woven through structured curricula designed for diverse learners at varying ages. This absence of a collaborative framework leads to gaps in learning where self-regulated space could be implemented consistently and effectively.

To address this concern, schools and other educational organizations should create specific standardized modules for professional development that focus on putting theory into practice. Such training would include peer observations and case study analyses, which would enable the trainees to translate research into practice (Saggers & Ashburner, 2019). This would also foster a community of educators, including school psychologists, occupational therapists, and other professionals that would promote open dialogue concerning sophisticated plans for collaborative intervention based on ongoing shared experiences and emerging research.

Moreover, in relation to the guidance of new teachers, schools can implement mentorship programs where more experienced teachers work collaboratively with novice teachers to deal with the phenomena of knowledge transfer and practical skill acquisition (Taylor, 2020). The provided training should be complemented with interdisciplinary collaboration tailored to the teachers so that well-designed self-regulation spaces are integrated into the routines of the classrooms. Flexible spatial designs can be optimally supported by knowledgeable pedagogical staff who help students develop essential self-regulation skills needed not only in the educational setting but also in their personal lives for their overall life development.

2.7 Research Gap 1: Teacher and Staff Perspectives

Although calm spaces provide significant advantages for self-regulation, engagement, and emotional well-being, the literature has largely overlooked staff and teacher's impressions regarding their use and effectiveness of calm spaces. As mentioned previously, the gap in literature is the silence of the people who are supposed to partake in the design, maintenance, and teaching pertaining to these spaces (Van Der Steen et al., 2020). This underrepresentation of staff voices has been addressed by French et al. (2020), who, along with Van Der Steen, utilized case studies combined with Q methodology to capture the underrepresentation of educators' needs and expectations in relation to students with autism spectrum disorder (ASD) and incorporated feedback from staff that provided guidance on the development of calm spaces within classroom settings. The respondents' guidance allows for the design of calm spaces within the classroom.

They further emphasize the role of contextual elements regarding the application of calm spaces (Azano et al., 2020). From their findings, they demonstrate that place-based approaches assist rural educators in more deeply fulfilling their set of calm space outcomes related to instructional and behavioral management within teaching. Their work suggests that the operational effectiveness of the calm spaces may be contextually moderated with factors such as school infrastructure, professional development resources, and local training educational policies (Azano et al., 2020). While these contributions are crucial, they have not been accompanied by any form of systematic qualitative evaluation, i.e., extensive interviews, longitudinal research, or focus groups, that would provide clear understanding into what the process of realizing calm space entails for educators.

Addressing this gap in research can aid in understanding the feasible, useful, and barrier-related perceptions of calm space implementation that a teacher may face should they decide to adopt this practice. Despite the claimed further accessibility and usability of the spaces, calm spaces cannot be regarded in the absence of instructors' input, which would guide the development of specified best practices (West, 2018). In addition, there exists a gap in the literature regarding teachers lived experiences that is likely to assist in defining the professional development gaps related to the training educators require to design and facilitate self-regulation activities for students. This may be achieved in future research by combining qualitative interviews and ethnographic observations with quantitative survey data describing educator interactions with and benefits from calm spaces within a single study framework to construct an expansive coverage of calm spaces in education. Such insights would assist in policy formulation regarding the optimal allocation of resources and the design of institutional frameworks and supports to maximize the impact of cool places across different educational contexts.

2.8 Research Gap 2: Specific Behavioral Outcomes

Several studies examining the use of calm spaces for in emotion regulation and student engagement have been quite favorable, but little is known about their capacity to demonstrate such changes in measurable behavioral outcomes. Felix et al. (2022) and Petka (2024) suggest that calm spaces can assist in managing student anxiety and improving discipline within the classroom. Although such studies emerge from a much wider scope of assessment, which includes, yet does not capture, the more detailed influences such as attention, impulsiveness, socialization frequency, and autonomy, they lack the detail needed to explain how calm spaces affect behaviors (Danahy, 2024). The lack of

precision opens a gap of ambiguity that educators and policymakers, without policy guidance, have grave consequences in sidestepping robust frameworks that dictate policy decisions. There are no succinct yet nuanced recommendations detailing the employment of calm spaces in diverse classroom contexts.

The accessible literature lacks subjective teacher evaluations and self-assessed accounts of teaching, which remains one of the most significant shortcomings of the available research. These approaches do offer useful perspectives about predominant behavioral trends, but they fail to provide conclusive evidence on the level and way calm spaces impact students' behavior in a neutral framework devoid of biases. Furthermore, or perhaps more troubling, is the fact that most studies are short-term and cross-sectional in nature (Xiong, 2023). To fill this gap, researchers need to conduct longitudinal studies to examine students' behavioral changes over extended periods of time in relation to calm spaces to understand the impact of these spaces over time.

Additional work will need to develop uniform methods for observation to assess changes in student actions. These measurement methods could account for the frequency of students' self-regulated interactions with peers and their subsequent reductions in disruptive actions within the calm spaces. To establish evidence concerning the efficacy of calm spaces, bronchodilator and biometric data collection such as heart rate variability measurement, cortisol level quantification, or the use of "eye tracking" technology to assess shifts in students' focus on the calm room may be employed (Brasfield et al., 2024). Other calm room research may examine their impact on other groups of students, such as those with ASD, ADHD, and anxiety disorders who have various self-regulation difficulties. By studying the effect of such environmental alterations on behavior outcomes in different population groups, various intervention strategies can be developed incorporating specific changes to the environment, like the use of light, sensory devices, or spatial arrangement, to optimize the impact of calm spaces on behavioral outcomes.

2.9 Research Gap 3: Integration with Other Interventions

This area seems to represent a glaring gap in the literature where classrooms operate under a heuristic model for accommodating students' well-being and academic participation. At the same time, most studies, such as French et al. (2020) and Azano et al. (2020), draw attention to the fact that a successful innovative learning environment hinges on the interplay between the spatial features of the setting and the guiding pedagogical approaches employed. The existing literature does not address how calm spaces, also known as quiet zones, may integrate with more structured SEL programs with enduring frameworks outlined. There is an apparent disconnect among educators where no clear instructional or behavioral frameworks exist to assist practitioners in the integration of the calm spaces into their services.

Moreover, a myriad of attempts to improve learner self-regulation, emotional strength, and scholarly achievement are done randomly and in silos without a comprehensive support system. For instance, the social-emotional learning curriculum instructs students on emotional intelligence and self-awareness and provides requisite tools of support for specific functionalities like ASD and ADHD. Mindfulness interventions also incorporate stress management, focusing aids, and other cognitive techniques. However, researchers have not yet explored the impact of employing calm areas in conjunction with these interventions, all of which have proven effective on their own.

It appears based on interviews and case studies that calm spaces might be integrated with other unique interventions. Teachers reported that some students engaging in social-emotional learning (SEL) activities seem to access calm spaces more frequently, having matured to a level of self-awareness and self-regulation that facilitates optimal use of the calm spaces (Hull, 2021). Additionally, pupils enrolled in mindfulness programs can be taught to regard spaces reserved for calm as ideal settings for the application of relaxation and concentration techniques. Following that line of reasoning, however, systematic empirical investigations do not seem to be conclusive on how best calm spaces should be designed to enhance the rest of other interventions, thereby creating an explanation of these relationships.

This gap can be addressed through experimentation and longitudinal studies focusing on the incorporation of calm spaces into larger class interventions. Another gap has to do with analyzing the impact of calm spaces combined with SEL curricula on emotional regulation, self-controlled behavior, and academic achievement as compared to other interventions. Similarly, researchers could investigate the impact of calm spaces on individual behavioral support plans in contrast with more formalized behavioral support.

In addition, the gap created by these studies can also be filled by designing an instructional calm space manual, which could serve practical instructions for educators applying these methods. Such a manual would provide guidelines on building calm spaces within SEL instruction, outline procedures for student transitions in and out of calm spaces within defined behavioral intervention plans, and suggest mindful, stress-relief, and serenity modifications to the calm spaces' environments. Professional development programs preparing teachers could assist schools by implementing calm spaces as an active rather than add-on element in existing intervention programs.

III. RESEARCH METHODS

This study aims to explore the effectiveness of calm spaces in special education classrooms for anger management, emotional regulation, and academic performance enhancement using a mixed-method approach that incorporates both qualitative and quantitative techniques (Taylor, 2020). Therefore, such a methodology attempts to assess all the impacts calm spaces have on students, as well as suggest improvements both academically and behaviorally.

Sampling: This study will employ purposive sampling among multi-categorical special education classrooms and some general education classes that actively incorporate the calm space method into their classrooms. The study

will pay particular attention to students with emotional/behavioral disabilities and learning disabilities, including attention deficit hyperactivity disorder (ADHD). It is important to note that these participants tend to have difficulties with emotion regulation, impulse control, attention to tasks, and active engagement in class. Other contributions will help identify how calm spaces can be utilized and what the organizational effects are (Lesiuk, 2018). Participants were selected by classroom teachers, teaching aides, school psychologists, and behavioral specialists who were familiar with the students.

3.1 Setting

The location of the study was in 3-5 settings of multi-category special education classrooms in one or more school districts. These classrooms involved students with learning disabilities, physical disabilities, emotional disabilities, and communication disabilities, among other disabilities, but were comprised of learners with mild and moderate categories. Participation will also be based on classrooms with already established calm zones or those in the establishment process. Schools and teachers, as well as specialists, permit observations and the conducting of surveys with their students.

3.2 Sampling Technique

The sampling technique involved a purposive selection process of participants and classrooms most suitable for the research study. The idea is to have the survey in classrooms where quiet zones is a reality, and the participants possessed those experiences and conditions to obtain relevant data. In the specific classrooms that have been chosen, convenience samples may be used to identify students and staff who are within the selected classrooms and willing to participate in the research (Saggers & Ashburner, 2019). It is essential to strive to achieve wide variation in types of disability, behavior, and experience under investigation.

3.3 Recruitment Process

Parents or guardians of the students selected for the research were provided with relevant study materials and accompanying consent forms for students' underage scrutiny well before the assessment. In terms of demonstrating informed consent, students were required to make an appropriate request to their parents for voluntary consent. In this way, the participants were given information regarding the study's objectives, systematically planned methodologies, and informed and voluntary consent.

3.4 Limitations

3.4.1 External Validity

This has the effect of having a negative impact on the scope of generalization that can be made from the study, as the sample of participants chosen for the study is rather low and is based on only a few classes. Although the study makes room for the use of non-random selection in purposeful sampling, as offered by the researcher, this remains subjective given that it relies on the researcher's definition of appropriate classrooms and participants (Saggers & Ashburner, 2019). Therefore, the results are unlikely to capture the entire breadth of students with special education needs on peculiar geographies, school systems, and degree of disability.

3.5 Data Collection Methods

The gathering of data was done in both quantitative and qualitative approaches. Participants' behavior was evaluated prior to the implementation of calm spaces, and then their behavior was assessed after the programs were introduced. Other elements which needed to be monitored include aggressive behaviors such as restlessness, impulsive behaviors, and alertness. The subjects' social behaviors will also be noted. The data was collected using data collection techniques such as behavioral rating scales or observational system for the instructional behavioral scale (Taylor, 2020). The attendance was their performance, which is why the attendance of a student in a class can determine his or her performance in tests, assignments, or any other classroom activity for the duration of the class. This value is for the purpose of comparison with the time spent on tests and assignments when the quiet space is implemented. It was posited that the students' time to resume instructional or learning activities following an interruption by their disruptive behavior will be measured.

3.6 Qualitative Data

Teachers, special education assistants, and behavior specialists were interviewed to use a semi-structured format. The interviews determined the participants' perceptions and experiences about calm spaces and their relevance in managing students' conduct and emotions. The plan and organization of this approach focused on identifying strengths in special education classrooms and addressing weaknesses. It aimed to build on the strengths of calm spaces while acknowledging areas that need improvement. To supplement the interview data, paper- and online-based self-completed questionnaires were also utilized to provide the staff members for the study with an option to provide their endorsement of the utility and impact of calm spaces.

3.7 Data Analysis

Statistical methods such as analysis of variance (ANOVA), t-tests, and chi-square tests were applied to the quantitative data. A paired t-test was used to compare the academic behavior of Calm Space users before and after the intervention. Similarly, the changes in the time taken to de-escalate was also deduced from the data to see if there is any change. Additionally, the data was used to determine if de-escalation times have changed. The results of the interviews and surveys was transcribed, coded, and analyzed thematically, as much as the quantitative data. The results of the five research questions consisted of key themes related to experiences and outcomes of the calm spaces, challenges faced by the individuals, and recommendations for the models. The qualitative data were added to the quantitative data, and what it lacked in nuance and context in meaning and interpretation will be supplemented by the perceptions of the educators and staff members.

3.8 Ethical Considerations

Every study will be done under the supervision of an Institutional Review Board (IRB), and ethical approval will be secured for pre-commencement. All legal guardians will give informed consent for their children's participation in the study (Mishra & Alok, 2022). Provided that the research is kept confidential, the identifying details of the participants will be protected. The researcher will safeguard the data and limit access to it.

3.9 Timeline

- Conduct preliminary behavioral observations, staff surveys, and interviews (Weeks 1 to 3) Phase 1 (Pre-Implementation).
- Add Calm Spaces and keep collecting data (Weeks 4-8). Phase 2 (Implementation)
- Behavioral observation and survey/interview (Weeks 9–12) Phase 3 (Post-Implementation)

IV. RESULT AND DISCUSSION

4.1 Chapter Introduction

This chapter aims to report the results of a mixed-methods study concerning the impact calm spaces have on the behaviors, emotional regulations, and learning of students in special education classes. Students and teachers completed separate questionnaires capturing their experiences and perceptions prior to and following the intervention. Semi-structured interviews were also conducted with both students and teachers. The purpose was to determine whether a calm area, defined as a space where children can be facilitated with ease for relaxation, enhances the emotional well-being and academic achievements of learners. The students' and teachers' oral responses concerning self-perceived usefulness and benefits were gleaned from self-structured questionnaires administered to 21 students and 19 teachers, utilizing descriptive statistical methods.

Along with unobtrusive participant observation, responses to open-ended questionnaires and key informant interviews were analyzed thematically using qualitative methods to explore the context and experiences in greater detail. The study's findings are presented in two main sections. The first section is "Student and Teacher Quantitative Results," from which quantitative results of the two groups are extracted and presented in four domains: behavior, emotional well-being, academic preparedness, and community participation.

The calm space's relevance and impact concerning people's lives are discussed in the form of experiences and case studies in the qualitative data, which is presented in the second part of this report. In general, the studies presented here illustrate that the calm space provided facilitates learning for moderately disabled children, enhances their emotional control, and reduces the negative, aggressive behaviors that can inhibit learning.

The participants' grade levels are included in this study as shown in Table 1. As Table 1 indicates, there were no major differences among the selected Grades 9 through 12, with the highest proportion of respondents (33.3%) being from Grade 10, whereas Grade 9 and Grade 11 respondents constituted 19.0% each. This balance implies that the feedback received about the calm space is representative of high school students, and therefore, the results of this study are valid and can be accepted.

Table 1. What grade are you in?

Grade	Frequency	Percent	Valid Percent	Cumulative Percent
9	4	19.0%	19.0%	19.0%
10	7	33.3%	33.3%	52.4%
11	4	19.0%	19.0%	71.4%
12	6	28.6%	28.6%	100.0%
Total	21	100.0%	100.0%	100.0%

The table below shows the students' age distribution based on the responses given in the survey. Students are aged 14 to 21 years with an average age of 15 years, with 17 and 18 years old being the upper limits. Most of the respondents provided sensible and courteous answers; however, some atypical responses, such as "none of your business" and "16 years old, yes, much better," suggested that students were indeed responding in a reasonable manner. Regardless, the broad age range captures the gaps in understanding for most secondary school students, hence enabling instructors to tailor instruction to learners of intended age, so the study can still be considered useful.

Table 2 How old are you?

Age	Frequency	Percent	Valid Percent	Cumulative Percent
14	1	4.8%	4.8%	4.8%
15	6	28.6%	28.6%	33.3%
16	1	4.8%	4.8%	38.1%
16 years old, yes, much better	1	4.8%	4.8%	42.9%
17	4	19.0%	19.0%	61.9%
18	4	19.0%	19.0%	81.0%
19	1	4.8%	4.8%	85.7%
20	1	4.8%	4.8%	90.5%
21	1	4.8%	4.8%	95.2%
None of your business	1	4.8%	4.8%	100.0%
Total	21	100.0%	100.0%	100.0%

Table 3 indicates the distribution of the student's gender. 66.7% of the participants were male, while 19% were female. 14.3% were "Other," which includes non-binary or talented students. This inclusion presents some form of diversity and demonstrates how they consider areas of calm separate for both males and females. It also emphasizes the need to cultivate an affirmative climate that is sensitive to gender and fosters support for all gender identities.

Table 3 What is your gender?

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Female	4	19.0%	19.0%	19.0%
Male	14	66.7%	66.7%	85.7%
Other:	3	14.3%	14.3%	100.0%
Total	21	100.0%	100.0%	100.0%

Table 4 explores if students have made use of their calm space within the classroom. Among the respondents, 90.5% said yes, which shows that the calm space strategy was well implemented and utilized. Yet, there was only one response of "Maybe" or "No" from one student (see fig. 1). The overwhelming calm space usage has these calm spaces regarded as features that are well integrated into the students' learning environments, thereby proving the credibility of the student feedback in this study.

Table 4 Have you used the calm space in your classroom?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Maybe	1	4.8%	4.8%	4.8%
No	1	4.8%	4.8%	9.5%
Yes	19	90.5%	90.5%	100.0%
Total	21	100.0%	100.0%	100.0%

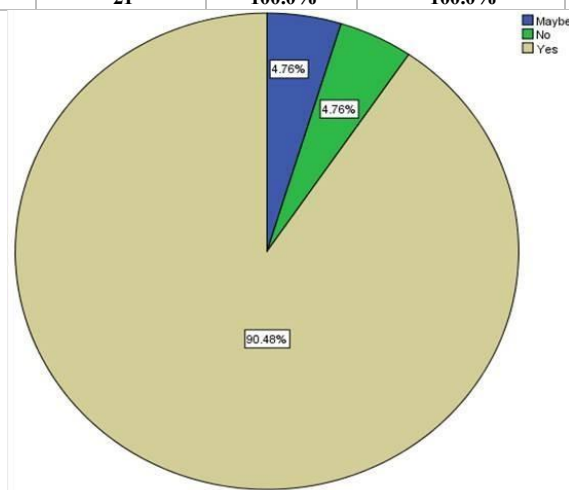


Figure 1: Have you used the calm space?

Table 5 presents some information regarding how often students used the calm space. Some 38.1 percent "rarely" use it, while those claiming to "rarely" use it were 28.6 percent, 19 percent once a week, and 14.3 percent daily. This range demonstrates variability in students' use of the space, likely due to individual emotional or behavioral issues. These findings are consistent with the notion that the calm space is flexible and student-centered.

Table 5 If yes, how often do you use the calm space?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
A few times a week	6	28.6%	28.6%	28.6%
Every day	3	14.3%	14.3%	42.9%
Once a week	4	19.0%	19.0%	61.9%
Rarely	8	38.1%	38.1%	100.0%
Total	21	100.0%	100.0%	100.0%

Table 6 describes the reasons students use the calm space, choosing combinations such as feeling upset, anxious, or needing a break. The mixture of answers indicates the multitude of emotional and sensory needs that tranquil spaces encompass. This reinforces the idea that the calm space was also a multipurpose intervention space designed to meet the individual's needs.

Table 6 Why do you use the calm space? (Check all that apply.)

Response Combination (Abbreviated)	Frequency	Percent	Valid Percent	Cumulative Percent
I feel anxious or worried	3	14.3%	14.3%	14.3%
I feel upset or angry	1	4.8%	4.8%	19.0%
Upset + Anxious	1	4.8%	4.8%	23.8%
Upset + Anxious + Break	1	4.8%	4.8%	28.6%
All + Other	1	4.8%	4.8%	33.3%
Upset and need to calm down	1	4.8%	4.8%	38.1%
Full combo (all 4)	1	4.8%	4.8%	42.9%
All + Other + Option 10	1	4.8%	4.8%	47.6%

Response Combination (Abbreviated)	Frequency	Percent	Valid Percent	Cumulative Percent
I need a break	3	14.3%	14.3%	61.9%
I need to calm down	1	4.8%	4.8%	66.7%
Calm + Break	2	9.5%	9.5%	76.2%
Calm + Other	1	4.8%	4.8%	81.0%
Option 10 only	1	4.8%	4.8%	85.7%
Other	3	14.3%	14.3%	100.0%
Total	21	100.0%	100.0%	100.0%

Table 7 illustrates how students typically feel after using the calm space. 42.9% had felt 'A little better' or 'Much better,' and 14.3% said they felt 'No change.' These findings indicate a positive emotional impact of calm spaces and their effectiveness in emotional recovery and regulation (fig. 2).

Table 7 How do you usually feel after using the calm space?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Better	9	42.9%	42.9%	42.9%
Much better	9	42.9%	42.9%	85.7%
No change	3	14.3%	14.3%	100.0%
Total	21	100.0%	100.0%	100.0%

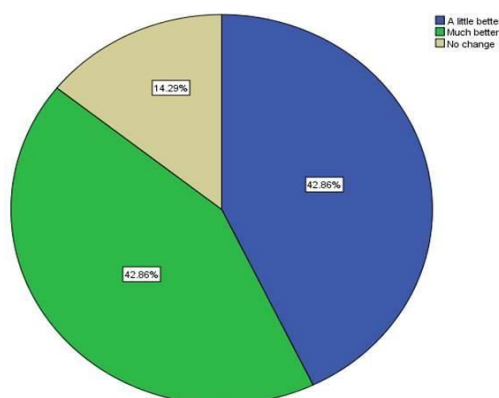


Figure 2 How do you usually feel after using the calm space?

Table 8 presents the results of the students' perceptions of whether the calm space has improved their behavior. The flow of responses, like a bar graph, is as follows: 61.9% responded "Yes," 28.6% said they were not certain, and the remaining 9.5% said "No." These results may imply that all the students understand the behavioral advantage; perhaps there is a requirement to relate it swiftly to some students (fig. 3).

Table 8 Has the calm space helped you behave better in class?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
No	2	9.5%	9.5%	9.5%
Not sure	6	28.6%	28.6%	38.1%
Yes	13	61.9%	61.9%	100.0%
Total	21	100.0%	100.0%	100.0%

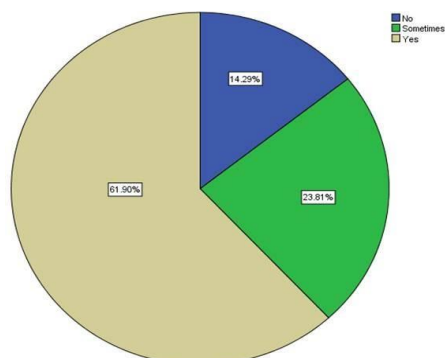


Figure 3 Has the calm space helped you behave better in class?

In Table 9, students were asked whether they considered the calm space to aid them in focusing during class. Overall, the majority of respondents, 61.9%, said they often use the internet for personal purposes, 23.8% said sometimes, and 14.3% said they rarely use it for personal purposes. The result implies that the calm space has benefits, particularly in enhancing students' academic attentiveness to lessons after they have exercised emotional self-control.

Table 9 Do you think using the calm space helps you focus better in class? – 10—Has the calm space helped you complete more classwork?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
No	4	19.0%	19.0%	19.0%
Not sure	4	19.0%	19.0%	38.1%
Yes	13	61.9%	61.9%	100.0%
Total	21	100.0%	100.0%	100.0%

Table 11 shows respondents' answers concerning the extent to which they feel they remain more interested in learning after engaging in the calm space. Approximately 30 respondents answered "Yes," indicating they were in the positive category. In the negative category, roughly 20 participants gave the response "No." About 10 participants responded in the negative category—"A little." This finding indicates that, though the quiet environment creates interest for most of the students, some require other forms of encouragement or individualized stimuli.

Table 11 Do you feel more interested in learning after using the calm space?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
A little	3	14.3%	14.3%	14.3%
No	7	33.3%	33.3%	47.6%
Yes	11	52.4%	52.4%	100.0%
Total	21	100.0%	100.0%	100.0%

Table 12 presents responses to two prompts about the calm environment: 'What does the student like most.' Some of the specific features mentioned include "squishy toys," "relaxing chairs," "aquarium," and "quietness," implying that most of the appreciated aspects are sensory, comfortable, and solitary. This insight strengthens the understanding that the elements of sensibility in shaping the space for pupils' sensory and emotional relief are inherent to how the space positively impacts learning.

Table 12 What do you like most about the calm space? (Short Answer)

Response	Frequency	Percent
nothing / I don't need it	1	4.8%
decrease stress and improve focus	1	4.8%
Doing Edgenuity on career planning	1	4.8%
fishes in aquarium	1	4.8%
go to a relaxing place	1	4.8%
good	1	4.8%
I get to be by myself	1	4.8%
I like it because it is quiet	1	4.8%
I like it because you can focus more	1	4.8%
I love the squishy toys and rest a little bit	1	4.8%
I like the big blanket over there	2	9.6%
IDK	1	4.8%
it's quiet	1	4.8%
mm / on the Chromebook	2	9.6%
relaxing chair / the couch	2	9.6%
the fishes in the aquarium	1	4.8%
yes	1	4.8%
Total	21	100.0%

In Table 13, students are asked what should be changed or added to improve the calm space. Observers' recommendations included 'more stress balls' and 'words' or 'musical instruments' and 'candy.' These views articulate that students have embraced the calm space as a personalized environment, and they would like components of the space to be altered to cater to their calmness and self-regulation preferences.

Table 13 What would you change or add to the calm space?

Response	Frequency	Percent
bad / IDK / mm	3	14.3%
candy go there every day	2	9.5%
Focus on my work / listen to music	2	9.5%
more items (balls, blanket, sofa)	4	19.0%
more fishes in the water/add a digital clock	1	4.8%
words of encouragement	1	4.8%
nothing / no, it's okay	4	19.0%
play with toys/stress balls	2	9.5%
Total	21	100.0%

4.2 Post-Test Questionnaire Results

Post-test surveys were given to the instructors to uncover insights related to the serene credible space and its impacts after the interventions had been imposed. This resulted in a hybrid set of questions concerning the students' self-regulated learning behaviors and emotions, physical classroom environment, and teaching impacts. This further strengthens the evidence for the calm space theory as an emotional and academic tool, corroborating the subdued evidence from the qualitative analysis.

Table 14 displays the calm space usage turnover in the students after they have used the calm space as frequently as they do when they come to class. "Students were asked to what extent they think the calm space is used

after, for instance, 89.5% of the students claim they use it ‘always,’ while only 10.5% respond ‘most of the time.’” Those pupils frequently remark on their intent to resume work alongside the calm area, which does not indicate the calm area is used as an avoidance tool.

Table 14 How often do students return after implementing the calm space?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Always	17	89.5%	89.5%	89.5%
Often	2	10.5%	10.5%	100.0%
Total	19	100.0%	100.0%	100.0%

Teachers' perceptions regarding changes in students' self-regulation skills are summarized in Table 15. Almost all participants (89.5%) reported that the improvement was “significant,” and another 10.5% would classify it as “moderate.” These observations support the effectiveness of such elementary characteristics for configuring children's learning environments towards psycho-emotional regulation.

Table 15 Have you observed an increase in students using self-regulation?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Moderate improvement	2	10.5%	10.5%	10.5%
Significant improvement	17	89.5%	89.5%	100.0%
Total	19	100.0%	100.0%	100.0%

Table 16 indicates how calm spaces have impacted tendencies of agitated behavior/emotional outbursts. About 84.2% of the participants expressed that their outbursts were “significantly decreased,” while the rest, 15.8%, said “slightly decreased.” This outcome proves that to avoid the students getting emotionally charged up, the calm space is an effective method of counseling.

Table 16 How has the calm space impacted the frequency of emotional outbursts?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Significantly decreased	16	84.2%	84.2%	84.2%
Slightly decreased	3	15.8%	15.8%	100.0%
Total	19	100.0%	100.0%	100.0%

The number of responses in Table 17 exposes how often students avail themselves of the calm space once they recognize that they are stressed. Thus, most of the teachers affirmed that the students use it voluntarily in the “Always” category, followed by the “Often” and “Sometimes” categories with an equal proportion of 5.3% each. These results point to the notion of increased self-consciousness and the display of an impulse to manage emotions profoundly.

Table 17 Do students willingly use the calm space when feeling dysregulated?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Always	17	89.5%	89.5%	89.5%
Often	1	5.3%	5.3%	94.7%
Sometimes	1	5.3%	5.3%	100.0%
Total	19	100.0%	100.0%	100.0%

In Table 18, out of the teachers who responded to this item, 84.2% affirmed that there was some degree of decreased disruption in their classroom practices following the adoption of the Calm Space concept. “Slight Decrease” was selected by the rest, 15.8%. This proves that clients are managed more proactively to mitigate emotionally and behaviorally motivated issues.

Table 18 Since the calm space was introduced, how has the frequency of disruptive behavior changed?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Significantly decreased	16	84.2%	84.2%	84.2%
Slightly decreased	3	15.8%	15.8%	100.0%
Total	19	100.0%	100.0%	100.0%

It was obvious from Table 19 that most of the teachers (94.7%) thought that their students demonstrated a “great” change in being able to pay attention. There is one code called “Option 11,” and it could either be a stray marker or an incomplete designation; nonetheless, it does not jeopardize the coherent final analysis. All these responses suggest that there is a remarkable academic benefit in using calm spaces.

Table 19 Has using the calm space improved students' ability to stay focused?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Greatly	18	94.7%	94.7%	94.7%
Option 11	1	5.3%	5.3%	100.0%
Total	19	100.0%	100.0%	100.0%

As noted in Table 20, 78.9% of the teachers stated that students “always” came back to class more interested and ready to learn. An additional 15.8% reported “often,” whereas 5.3% of the respondents claimed it was “sometimes.” The response indicates unambiguously that the calm room does help in soothing students' emotions and enables them to go back to class.

Table 20 Do students return more engaged and ready to learn after using the calm space?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Always	15	78.9%	78.9%	78.9%
Often	3	15.8%	15.8%	94.7%
Sometimes	1	5.3%	5.3%	100.0%
Total	19	100.0%	100.0%	100.0%

Based on the responses approved in Table 21, more than 80% of the educators indicated that there has been a notable increase in students' emotional engagement since the calm space was established. A negligible 10.5% classified it as a "moderate improvement," along with 5.3% who affirmed the potential for a slight improvement. Therefore, these results validate the propounded hypothesis, which states that having an area for students cooling off is beneficial.

Table 21 Since the introduction of the calm space, have students shown more emotional engagement?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Moderate improvement	2	10.5%	10.5%	10.5%
Significant improvement	16	84.2%	84.2%	94.7%
Slight improvement	1	5.3%	5.3%	100.0%
Total	19	100.0%	100.0%	100.0%

As educators have, sobering spaces carve out, provide students, and as examined in Table 22, 78.9% yes and the rest divided between no and unsure (emotionally unclear) spaces were and still are important. The overall thought amongst educators is that sobering spaces do and will continue to support emotional aid as well as support structures. Silent areas are highly beneficial to children needing times when things are overly turbulent and intense, and soothing areas are sorely required.

Table 22 Do students feel more comfortable and emotionally safe in a calm space?

Response Option	Frequency	Percentage (%)
Yes	15	78.9%
Not Sure	4	21.1%
No	0	0.0%
Total	19	100.0%

According to Table 22, a considerable proportion of students (78.9%) feel comfortable and emotionally safe in calm spaces, which is consistent with how these environments reasonably impact special education students' emotional well-being. Importantly, there are no students who felt outright unsafe, although 21.1% remained neutral, signaling that some perceivable improvements are possible.

Table 23 How often do students use the calm space independently?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Always	17	89.5%	89.5%	89.5%
Often	2	10.5%	10.5%	100.0%
Total	19	100.0%	100.0%	100.0%

From Table 24, most of the teachers (84.2%) agreed that the overall classroom atmosphere is "significantly better," while 15.8% responded with "slightly better." These findings suggest that calm spaces not only improve the learning environment but also contribute to a more positive and focused classroom atmosphere for all learners.

Table 24 How do you perceive the classroom atmosphere since implementing the calm space?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Significantly better	16	84.2%	84.2%	84.2%
Slightly better	3	15.8%	15.8%	100.0%
Total	19	100.0%	100.0%	100.0%

Table 25 provides an overview of responses from calm space teachers in regards to calm teaching methodology. 84% yes, 10.2% no, and 5.3% unsure frame protective classroom surrounds. Moderate impact was the answer given by 5.3%, which is telling in itself. The boldness within the calm, sobering space it emerges tells its own story of placing it within crucial learning. Calming spaces are required practice that profoundly serve to strengthen peaceful bonds between senses of sane surroundings and children.

Table 25 Do you feel the calm space has contributed to a more supportive classroom environment?

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Greatly	18	94.7%	94.7%	94.7%
Moderately	1	5.3%	5.3%	100.0%
Total	19	100.0%	100.0%	100.0%

In Question 26, optional calm indicates the use of the calm space and gives positive impacts in the observation data of calm space usage, analyzed through teachers' feedback. In the narrative, many noted a reduction in anxiety, tantrums, improved focus, and anger control. In addition, several answers emphasized that students came back to class from the calm space less agitated and with heightened attention and motivation towards learning.

Question 27 shows the shift toward calm spaces brought about by teachers in the management of students. Of all the teacher-student discipline used, 75 % reported they used positive reinforcement or even sadistic methods, while only 25 % answered they used punitive discipline. Several also indicated that these methods had enhanced the improvement of student self-control. enabling instructors to spend most of their time teaching without worrying much about such behaviors.

In question 28, teachers gave feedback on how calm can be promoted to the staff and students. Among others,

they included training for the staff, soliciting student feedback, supplying sensory aids and tools, and sorting the students according to their particular needs. Such disparity indicates the fact that all respondents have common objectives in regard to adjusting the needs and utilizations of the classrooms.

4.3 Qualitative Results

The qualitative data were gathered from teachers' open-ended responses, offering more profound insights into their observations and experiences using calm spaces in special education classrooms. These responses were thematically analyzed, and several key themes emerged.

4.3.1 Theme 1: Improved Emotional Regulation

a) Question: Have you seen any changes in the student's behavior since you implemented the calm space?

Responding to the questionnaire, teachers noted the soothing and serene calm environment deeply enhanced the student's self-regulation and self-appraisal. Teachers noted that emotional outbursts and tantrums were considerably less frequent. This was often explained by the use of the calm space strategies, which fostered preemptive pausing and emotion regulation reflection prior to acting out, especially in cases that would have evoked anger in the past.

Answers:

"Yes, students who had frequent outbreaks are now able to deescalate their emotions before the situation gets out of hand."

"Yes, I've noticed a remarkable decrease in aggressive behavior—one student who used to throw things has now started asking for a break instead."

"Definitely. Students are more in touch with their emotions and use the calm space rather than disturbing the lesson."

The interview question asked,

b) Question: "What are your emotions when you are in a calm space?"

Student participants responded that the calm area made them feel safe and comfortable. They emphasized that being in a shared, secluded space helped them feel less angry, more relaxed, and emotionally secure. These responses suggest that calm spaces fulfill a critical need among students for a supportive environment where they can effectively manage their emotions.

Answers:

"I feel better and not angry anymore." "It helps me calm down when I'm sad."

"Safe. I feel like I can breathe and think."

4.3.2 Theme 2: Behavioral Self-Regulation and De-escalation

c) Question: How has the idea of a calm space been implemented, and do you have examples of when students were able to deal with aggressive behavior or anger in such a space?

The answers participants gave were that students nowadays are able to use the calm space when they are close to becoming destructive. Some of the current change's teachers noted are that instead of aggressing, the students are now calm and able to manage their behaviors to return to the group activities in a shorter time.

Examples of respondents' responses:

"One student with frequent outbursts now asks to go to the calm space before things escalate." "Students are able to return to classwork faster after visiting the calm space."

"Instead of yelling or crying, students use sensory tools in the calm space to self-regulate."

4.3.3 Theme 3: Increased Readiness and Focus Post-Calm Space Use

d) Question: Do students come back from the calm space more regulated in their emotions or ready to learn? the teacher's request.

Examples of respondent's responses:

"Yes, most students return calmer and more focused. They're able to follow directions again."

"One student takes about five minutes in the calm space and then rejoins group work without issue."

"Usually, yes. They come back ready to participate and less agitated."

When asked during the interview, "What do you like most about the calm space?" The student participants responded with positive experiences, specifically describing how the space was useful and meaningful to them.

Examples of respondent's responses:

When asked during the interview, "What do you like most about the calm space?" The student participants responded with positive experiences, specifically describing how the space was useful and meaningful to them.

Examples of respondents' responses:

"When I get angry, I go there so I don't yell. I breathe and feel better." Some other respondents talked about the emotional safety that the space offered, describing it as a space where "nobody is judging me." Some students explained how engaging with calming tools such as drawing or squeezing a stress ball helped distract them from their issues, which led to a sense of relief.

Concerning the documentary question, "What do you do when you are angry or stressed?" Students explained responses regarding the actions they do in the space to control their emotions, such as deep breathing and silence, and with the calming tools made available to them.

The respondent mentioned he prefers the use of freedom fidgets like Tic Tac along with breathing exercises and self-drawings.

Example Responses:

"I like the fidget toys. They help my hands calm down," said one student.

"I sit in the beanbag and take deep breaths," another respondent explained.

"I draw or color until I feel good," a different one mentioned while other students shared their self-soothing techniques.

However, the interview question used in dealing with those who used the calm space was, Do you feel ready to go back to class? What calming features would you add to the booth? The students' responses to the facilitator's questions varied. Many said they felt nearly ready to return to class after a break in the calm area, though some needed a few more minutes. They also came up with suggestions like setting alarms, increasing lighting, and having more books regarding emotion, and they looked more like they wanted to change something in the environment to make it easier for them to engage.

"Yes, I feel calm and can do my work again."

"Sometimes I need a little more time, but then I'm okay."

"A book about feelings or something to help me know what to do when I'm upset."

4.3.4 Theme 4: Academic Engagement and Task Completion

The interview question for this case was, "Have you noticed any changes in students' behavior or task achievement before and after using the calm space?" The teachers reported that the calm space helped students transition from a state of anger to one more, ready for learning. After the calm space was implemented, teachers observed that students became more compliant with tasks and demonstrated more orderly behavior in the classroom.

Example Responses:

"Yes, they come back more focused and able to follow through with their work." "I've noticed fewer refusals to do tasks after students take a calm space break." "Some students who would otherwise shut down are now willing to try again."

4.3.5 Theme 5: Patterns of Usage and Triggers

The structured interview question was, are there specific times during the day or circumstances under which students come to the calm space? Observations by both the teacher and student participants indicated that the calm space is optimally utilized at the peak of exertion, such as after breaks or recess, during transition periods, and after conflicts with other children. These situations tend to elicit stress and/or nervousness in students, and the calm space aids effectively in such relief efforts, allowing for students to regain their composure.

Sample Responses: "Right after recess and lunch—it's usually when students come back overstimulated." "During transitions, like moving from one activity to another, some students get anxious."

"After conflicts with peers or when the classroom gets too loud." Theme 6: Implementation Strategies and Challenges Implementation Strategies and Challenges is one of the six themes derived from the data. The concerns raised in the previous primary theme have been addressed in this theme. The other delegates responded to the question, What has been your experience of challenges of maintaining a calm environment? Have you had any? Teachers noted calm spaces are useful but highlighted issues such as overuse, avoiding the space by some students, and lack of monitoring. However, in the calm space, these concerns must be monitored, and the communication about the calming space needs to be monitored as well so that it is the correct use of the space intended. After setting guidelines, teachers seem to have made no control over these issues to resolve them.

Sample Responses:

"Other students try to use it in order to escape their responsibilities instead of using it to wind down."

"While teaching the rest of the class, it can be difficult to supervise the area."

"I employ tracking sheets to record the times students utilize the area and their subsequent actions."

4.4 Discussion

The impact of calm spaces on behavioral, emotional, and academic engagement among students with mild to moderate disabilities in special education classrooms was the focus of research. In particular, it examined if calm spaces set up as specific areas within the classroom mitigated emotional issues, aggressive behavior, and enabled academic engagement. (Hull, 2021). In order to collect data, a survey was distributed to both students and teachers. Data was collected from participants through questionnaires and semi-structured interviews as to their implementation, use and effect of this space on teaching and learning. The evidence gathered shows that allowing students to work in a calm environment significantly reduces aggressive or disruptive behavior and improves academic performance. From the survey, it was found that more than 90% of students visited the calm space at least occasionally. As for teachers, they observed strong positive changes in self-regulation, reduced tantrum episodes, and improved social climate among the students.

Moreover, 67% of students surveyed said that their behavior and focus in class improved as a result of using the calm space. This is corroborated by interview data in which students and teachers referred to the calm space as an area for emotional recuperation. They pointed out the silence, the sensory aspects of the space, and the clear-cut activities as the main elements that helped in the attainment of emotional containment and involvement in learning. Most importantly, the findings of this study corroborate prior studies of the efficacy of trauma-informed and sensory-responsive techniques on the emotional and academic outcomes of young learners with neurodiversity (Felix, 2020). This research builds on six prior studies by Felix (2022b) conducted with students and teachers in multi-categorical special education settings. Felix, along with Lesiuk, argues that calming measures and sensory spaces designed for students diagnosed with emotional behavior disorders (EBD) greatly reduced the ease of engaging with the activity, thus minimizing classroom disruptions.

By examining the aims and objectives set for this study, it was possible to provide an answer to all the research questions posed in this study. The results indicated that calming areas within the classroom assist students in

managing their emotions, which lessens their physical outbursts so that they return to class less angry and agitated. It also validated teachers' claims that these areas are employed as pedagogical tools for minimizing time wastage, improving the learning atmosphere, and responding to disruptive behaviors (Lesiuk, 2018). The students claimed they utilize such areas and proposed a timer, sensing objects, and attitude and feelings books to showcase their active ownership of the intervention. They are regarded as safe spaces that contain the materials and techniques essential for student self-expression, enabling learners to readily withdraw from classroom tasks and re-engage autonomously with the learning activities (Taylor, 2020). After conducting the study, the results showed that calm spaces are more than just a physical location.

V. CONCLUSION AND SUGGESTION

5.1 Conclusion

The current study validates the implementation of calming spaces as an intervention strategy for special education classrooms. Both qualitative and quantitative evidence suggests that these spaces assist learners in calming down and returning to productive academic engagement more effectively. From the teacher's perspective, 89.5% of the respondents agreed that students usually came back to class after utilizing the calming space, and 94.7% noted that students had significantly improved their focus. On the other hand, in the students' questionnaire, 85.8% reported feeling "a little better" or "much better" after utilizing the calming space, and 61.9% thought they were able to behave and focus better in class as a result.

These results suggest that environments described as calm do exist, thereby indicating that these learners with EBS do not regard calming zones as mere appendages; rather, they are instrumental in the development of learning environments for such learners. When practices blend student voice with exclusion, devoid of understanding as a primary intent, calm spaces change school perspectives through a restorative lens. More effort is needed for future studies specifically targeting calm space intervention and its effects on performance, attendance, and overall mental well-being. Future studies should incorporate control groups and larger samples to enhance the credibility and broader applicability of the results. It would be beneficial, however, to implement these intervention strategies in various educational contexts beyond the scope of this study, including rural and village primary and secondary schools, as well as urban academies. For example, future studies might investigate how students with certain diagnoses, such as ADHD, Autism Spectrum Disorder (ASD), and Post-Traumatic Stress Disorder (PTSD), use calm spaces and what differences in outcomes they experience based on their diagnosis.

Employing heart rate monitoring as a biometric measure, or classifying/reference observation rubrics techniques, would improve the precision of emotional regulation measurement. Further investigation is needed in which family and caregiver data is included in order to analyze how emotional regulation strategies taught at school are supported and reinforced in the home environment. In order to promote emotionally safe schools, these environments must first be prioritized by leaders and policymakers so funds can be allocated to build new, psychologically supportive structures. Spending for such structures includes funding for calm spaces, SEL lesson plans, and trauma-informed professional development for teachers over a sustained period of time. To provide a safe environment where students can feel free to manage their emotions, equipped with the building blocks that will help foster the pre-established equity and inclusion, is essential to setting up an effective educational system.

5.2 Recommendations

As for educators, school administrators, and policymakers, the following recommendations focus on the strategy and policy level towards aiding the use of calm spaces in classrooms. Finding a safe place can also help students improve their productivity as distractions are removed (Pacheco & Xiong, 2023). For example, it is highly advised that they use these spaces as standard support practices for students with Emotional and Behavioral Support (EBS) needs (Saggers & Ashburner, 2019). In providing rationale, Saggers and Ashburner (2019) note the "calm" spaces bespoke to the ergonomic spatial design should possess numerous sensory occupational therapy tools (SOTs) alongside visual aids and furniture that can easily be customized to suit students' preferences and needs. With calm spaces in mind, Xiong (2023) suggests that school principals, teachers, and support staff receive additional training focused on implementing, monitoring, and evaluating their usage. This additional training, as cited by Xiong (2023), requires criteria explaining what constitutes an appropriate calm space alongside guidelines for its teaching, use, and assessment. Furthermore, trauma-informed care practices should be adopted so that educators can identify warning signs of distress or triggers and acute emotional responses to students. Teachers need to be instructed on how to use data from the calm spaces to support behavioral intervention plans.

Final example Shelnutt embodies a futuristic posture when students are consulted about measures they would want incorporated in the calmness spaces tailored to their needs. Besides, students suggesting these items, such as decorations or even exercises for calming, ensures they claim ownership over the areas, and relevance is provided (Shelnutt, 2024). Last but certainly not least, schools need to ensure calm space records or check-in sheets are created so that usage, efficiency, and frequency can be recorded.

5.3 Implications

This study's findings are important to consider when formulating policies directed towards the inclusive educational and psychological support services at school levels for students with special mental health needs. It is highlighted that calm spaces serve as a low-cost, evidence-based instructional strategy that is not punitive in nature and is rooted in students' self-regulation skills within a specified period of time (Danahy, 2024). If these spaces are structured appropriately, they have the potential to not just aid the learner but improve the overall classroom

environment by mitigating higher rates of aggression and assisting in the transition from aggressive behaviors to learning.

This study emphasizes the need to nurture the formation of an emotionally safe learning atmosphere with regard to more special attention and focus for learners with special needs. These results support that calm spaces, as self-contained classroom strategies, encourage emotional self-regulation and promote social-emotional learning (SEL) while decreasing teacher burnout associated with behavior management (Nyakoe, 2024). Moreover, calm spaces assist in fostering fairness and equity, as well as accommodating inclusion in the education system.

5.4 Limitations of the Study

Despite the findings being valuable, there are some limitations that must be considered. Firstly, the sample size of 21 students and 19 teachers may not be representative of the special populations within the field of special education. Also, self-administered questionnaires, especially among younger students, may have provided biased responses or misinterpreted items due to the tendency to agree with all statements. In addition, some of the responses given were inconsistent or vague, such as 'option 10' or 'none of your business,' suggesting that qualitative research instruments in future studies need to be better defined (Pierce, 2022). Moreover, lack of longitudinal data makes it impossible to measure long-term impacts of the intervention on students' academic performance or onsite behavior. In addition, the absence of a comparison group further weakens the evidence on the cause and effect sought in this study.

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